MLOps Foundation Certification

About DevOpsSchool

DevOpsSchool is a unit of "Cotocus PVT ltd" and a leading platform which helps IT organizations and professionals to learn all the emerging technologies and trend which helps them to learn and embrace all the skills, intelligence, innovation and transformation which requires to achieve the end result, quickly and efficiently. We provide over 40 specialized programs on DevOps, Cloud, Containers, Security, AI, ML and on Big data that are focused on industry requirement and each curriculum is developed and delivered by leading experts in each domain and aligned with the industry standards.

About Course

The MLOps Foundation Certification is an industry-recognized credential designed to equip professionals with the essential knowledge and skills needed to implement MLOps (Machine Learning Operations) practices. MLOps is a collaborative approach to managing and automating the lifecycle of machine learning (ML) models, from development and deployment to monitoring and maintenance. By integrating machine learning with DevOps principles, MLOps ensures that ML models are deployed, monitored, and updated efficiently and at scale, aligning the models with the needs of the business while ensuring quality, reproducibility, and accountability.

The MLOps Foundation Certification focuses on the foundational concepts of MLOps and provides participants with the tools necessary to apply these practices effectively within organizations. The certification covers a variety of topics, including data versioning, model deployment, model monitoring, automation of model pipelines, model governance, and ensuring model performance over time. It is designed for individuals who wish to improve their understanding of MLOps and leverage this knowledge to streamline machine learning workflows, reduce model deployment risks, and improve overall model efficiency.

With machine learning becoming an integral part of business operations, professionals skilled in MLOps are in high demand. The MLOps Foundation Certification is ideal for those seeking to specialize in ML model management and automation, providing them with the necessary expertise to advance in the rapidly growing field of AI and machine learning operations.

Co-coordinator – Akanksha Kumari

Call/WhatsApp: - +1 (469) 756-6329

Mail Address: -

contact@DevOpsSchool.com

Secondary Contact – Patrick

Call/WhatsApp: - +91 7004 215 841

Mail Address: -contact@DevOpsSchool.com

Duration	5 days
Mode	Online (Instructor-led, live & Interactive)
Projects (Real time scenario based)	1

FEATURES	DEVOPSSCHOOL	OTHERS
Faculty Profile Check	✔	✖
Lifetime Technical Support	✔	✖
Lifetime LMS access	✔	✖
Top 25 Tools	✔	✖
Interviews Kit	✔	✖
Training Notes	✔	✖
Step by Step Web Based Tutorials	✔	✖
Training Slides	✔	✖
Training + Additional Videos	✔	✖

Training

DevOps As part of this course, you would be strong in DevOps technology. You would learn Linux, Python, DevOps, Docker, Jira, Git, SonarQube, Maven, Ansible, Jenkins, Kubernetes, Datadog, Splunk, NewRelic, Terraform and various other stacks related to this methodology.

Projects

As part of this initiative, trainer would help you to execute one real time scenario based project, doing it end to end and step by step to visualize a real agile work environment in any organization.

Interview

As part of this, you would give complete MLOps Foundation Certification interview preparations Kit.

This interview kit will help you organize your application and interview with eas

AGENDA : MLOPS FOUNDATION CERTIFICATION

Day 1 - Introduction to MLOps and the ML Lifecycle

Introduction to MLOps

- What is MLOps and why is it important in the Machine Learning (ML) lifecycle?
- Key principles and practices in MLOps
- MLOps vs traditional DevOps: Key differences and similarities
- The role of collaboration between data scientists, ML engineers, and operations teams

The ML Lifecycle

- Understanding the stages of the ML lifecycle: Data Collection, Preprocessing, Model Training, Evaluation, and Deployment
- Key challenges in managing the ML lifecycle at scale
- Importance of reproducibility and versioning in the ML process.

MLOps Workflow and Tools

- Introduction to MLOps tools and platforms (e.g., Kubeflow, MLflow, TFX, DVC)
- Integrating data, model, and pipeline versioning into the MLOps pipeline
- CI/CD in MLOps: Automating workflows for ML models and data pipelines.

Hands-On Activity

- Set up a basic MLOps pipeline using a tool like MLflow or Kubeflow, integrating versioning for data and models.

Day 2 - Model Training, Hyperparameter Tuning, and Model Monitoring

Model Training at Scale

- Key considerations when training models at scale (e.g., distributed training, cloud-based training)
- Use of GPU/TPU and parallelism for faster model training
- Model versioning: Keeping track of different model iterations.

Hyperparameter Optimization

- Introduction to hyperparameter tuning and its impact on model performance
- Techniques for hyperparameter optimization (e.g., grid search, random search, Bayesian optimization)
- Automating hyperparameter tuning in MLOps workflows using tools like Optuna, Hyperopt, or Ray Tune.

Model Monitoring and Evaluation

- The importance of continuous model evaluation and monitoring after deployment
- Tools for model monitoring (e.g., Prometheus, Grafana, MLflow)
- Detecting model drift and retraining models automatically
- Setting up alerts and performance monitoring pipelines.

Hands-On Activity

- Implement model monitoring and automated hyperparameter tuning in a sample ML project using available MLOps tools.

Day- 3 Model Deployment, Versioning, and Governance

Model Deployment Strategies

- Different deployment strategies: A/B testing, canary releases, blue-green deployment
- Deploying models on cloud platforms (AWS SageMaker, Azure ML, Google AI Platform)
- Best practices for model versioning in production environments.

Continuous Integration and Delivery (CI/CD) in MLOps

- Building and maintaining automated CI/CD pipelines for ML models
- Integrating model validation and testing into CI/CD pipelines
- Ensuring seamless deployment pipelines for models using MLOps tools.

Model Governance and Compliance

- Managing model performance and compliance in regulated industries (e.g., healthcare, finance)
- Tracking model lineage and ensuring reproducibility in a production environment
- Automating model audit logs for compliance and tracking
- Ensuring transparency and explainability in ML models.

Hands-On Activity

- Set up a CI/CD pipeline for deploying an ML model to a cloud platform, ensuring automatic validation and version control.

Day – 4 Scaling and Automation in MLOps

Scaling ML Pipelines

- Key strategies for scaling ML workflows and pipelines (e.g., distributed computing, serverless architectures)
- Using Kubernetes and Docker to scale ML workloads
- Cloud-native architectures for managing large-scale ML pipelines.

Automation in MLOps

- The role of automation in MLOps for continuous integration, deployment, and monitoring
- Automating data pipeline creation, model training, and deployment
- Using workflow orchestration tools like Apache Airflow and Kubeflow Pipelines for automating MLOps tasks.

Cloud-native MLOps and Kubernetes

- Introduction to Kubernetes in MLOps: Benefits of containerization for ML workflows
- Setting up scalable MLOps workflows on Kubernetes
- Integrating container orchestration with model serving and data processing

Hands-On Activity

- Implement a scalable model deployment pipeline using Kubernetes and Docker, integrating automated model retraining

Days – 5 Advanced MLOps Concepts, Best Practices, and Exam Preparation

DataOps Best Practices

- Handling complex data pipelines (streaming data, large-scale data)
- Advanced topics in model interpretability and explainability
- Using MLOps for Reinforcement Learning and NLP models
- Keeping models up-to-date with continuous learning and real-time data streams.

Best Practices in MLOps

- Managing version control for models, data, and experiments
- Securing MLOps workflows (e.g., data privacy, model integrity)
- Collaboration between Data Science, DevOps, and Business Teams in MLOps
- Ensuring high-quality, production-ready models.

Certification Exam Preparation

- Key topics to focus on for the MLOps Foundation Certification exam
- Review of sample questions and practice scenarios
- Understanding the exam format and study resources
- Tips for successfully passing the MLOps Foundation Certification.

Final Hands-On Activity

- Final project: Implement an end-to-end MLOps pipeline that includes training, deployment, monitoring, and governance best practices.

Thank you!

Connect with us for more info

Call/WhatsApp: - +91 968 682 9970
Mail: - contact@DevOpsSchool.com
www.DevOpsSchool.com